

Remarks

Review of telephonic interview of October 29, 2004

On October 29, 2004, Howard M. Ellis, Attorney of Record, and Robert C. Atkinson, who provided technical assistance on behalf of Applicant, conducted a telephonic interview with Mr. Gordon J. Stock, Jr., Examiner for the above-identified application. At the outset, Applicant would like to thank the Examiner for his generous allowance of time to discuss the merits of the case, grounds of rejection and various cited references relied on in the rejection. Applicant believes the interview was a productive and useful dialogue that clearly identified the Examiner's concerns regarding patentability.

Examiner Stock indicated United States Patent No. 6,180,415 (*Schultz et al.*) and United States Patent No. 4,752,567 (*De Brabander et al.*) formed the primary basis of his rejections. *Schultz et al.* was discussed in detail in the prior telephonic interview of June 10, 2004 between Examiner Stock, Mr. Ellis and Mr. Atkinson. The June 10 interview provided a mutual understanding that *Schultz et al.*'s disclosure was silent regarding any teaching or suggesting, as to render obvious, the concept of recording an image of the structure to which the PREs are bound. It follows that the patent is silent regarding the combination of a detection image and at least one microscopic image for subsequent evaluation by digital image processing means, according to Applicant's claims. Therefore, *Schultz et al.* fails to make out a *prima facie* case of obviousness.

Having previously discussed the merits of *Schultz et al.*'s disclosure, the teachings of *De Brabander et al.* were the focus of the telephonic interview of October 29, 2004. Examiner

Stock expressed concern that *De Brabander et al.*'s disclosure taught capturing both a detection image and at least one microscopic image. Applicant agreed to review the patent in greater detail and would outline why it too fails to make out a *prima facie* case of obviousness. This discussion of *De Brabander et al.* is provided below.

The Rejection of Claims 32, 34, 36-38, 43-45, 47-48 and 54-58 Under 35 U.S.C. § 103(a)

Claims 32, 34, 36-38, 43-45, 47-48 and 54-58 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Schultz et al.* in view of *De Brabander et al.*. Applicant respectfully traverses this rejection and requests reconsideration for the following reasons.

As agreed during the above-mentioned telephonic interview, Applicant is now furnishing an analysis of the *De Brabander et al.* disclosure. In view of currently amended Claim 32, the teachings of *De Brabander et al.* do not disclose each and every element of Applicant's claimed invention. *De Brabander et al.* teach a method of visualizing individual submicroscopic metal particles by subjecting the particles to specific illumination conditions and subsequently enhancing the image contrast by electronic means. More specifically, "the subject invention is concerned with visualization of single, essentially spherical, particles of submicroscopic dimensions." (*De Brabander et al.*, Col. 2, lines 51-53).

De Brabander et al. teach away from Applicant's invention when describing the best mode of practicing their particle visualization technique. As expressly taught in *De Brabander et al.*:

“When using the method according to the invention, and in order to distinguish the concerned metal particles to the greatest possible extent from the surrounding substrate, it will be appropriate to use a greater working aperture than required for optimal visualization of the substrate. In practice, the best results are obtained when working at full or nearly full aperture, i.e. under circumstances where the direct microscopic image has, due to its excessive brightness, almost no contrast and is for that reason completely inadequate for visual examination.” (*De Brabander et al.*, Col. 5, Lines 10-20) (emphasis added).

This inadequacy is further shown in the description of the resulting image. *De Brabander et al.* describe that:

“[u]nder bright field microscopy, the spots will be dark against a bright background, while under epi-polarization microscopy, the particles will become visible as bright sparkling spots.” (*De Brabander et al.*, Col. 5, Lines 24-27).

As described above, an optical system configured to perform the *De Brabander et al.* method is only capable of providing an image of the detection particles. It follows that the method cannot provide an image of the detection particles while providing an image of the structure. Therefore, in view of Applicant's amended Claim 32, *De Brabander et al.* is lacking an essential element of Applicant's claimed invention, i.e., simultaneously recording an image of the detected particles and at least one microscopic image of the structures.

Additionally, in the example provided by *De Brabander et al.*, further distinction from Applicant's invention is described. In order to discern between particles and endogenous

organelles, a practitioner of the *De Brabander et al.* method must sequentially switch between various optical setups. In contrast, Applicant's amended Claim 32 expressly states that both the detection image and at least one microscopic image of the structures are simultaneously recorded. Sequentially changing optical setups does not permit simultaneous recording of an image of the detected particles and at least one microscopic image of the structure, an essential element of Applicant's claimed invention. Hence, *De Brabander et al.* fails to make out a *prima facie* case of obviousness.

Further, in the instant Office Action, Examiner Stock concedes that *Schultz et al.* do not disclose recording an image of detected particles and at least one microscopic image of the structures to which said particles are bound. *Schultz et al.* only teach recording spectral emission characteristics, *i.e.*, recording a detection image. Although they do assert that a plurality of PREs may be obtained in a single image, an essential element of Applicant's claimed invention is still lacking, *i.e.*, simultaneously recording an image of the detected particles and at least one microscopic image of the structure. Therefore, *Schultz et al.* fail to make out a *prima facie* case of obviousness.

In order to establish a *prima facie* case of obviousness under Section 103, the references alone or in combination must teach all the elements of rejected Claim 32, which they do not. Furthermore, there is no motivation to combine *Schultz et al.* with *De Brabander et al.*, or change what is taught by these references. Therefore, it follows that Claim 32 is non-obvious in view of *Schultz et al.* and *De Brabander et al.*.

Furthermore, Claims 34, 36-38, 43-45, 47-48 and 54-58 are also non-obvious in view of *Schultz et al.* and *De Brabander et al.*, due to their dependency from Claim 32.

Withdrawal of the rejection of Claims 32, 34, 36-38, 43-45, 47-48 and 54-58 for reasons of obviousness is courteously requested.

The Rejection of Claims 33, 35 and 39-42 Under 35 U.S.C. § 103(a)

Claims 33, 35 and 39-42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Schultz et al.* in view of *De Brabander et al.*, further in view of United States Patent No. 6,214,560 (*Yguerabide et al.*). Applicant respectfully traverses this rejection and requests reconsideration for the following reasons.

The teachings of *Yguerabide et al.* have the same deficiencies as those of *Schultz et al.* and *De Brabander et al.*. In fact, in this instance, the patent teaches away from Applicant's invention. Similar to *De Brabander et al.*, "[t]he [*Yguerabide et al.*] method and associated apparatus are designed to maximize detection of only scattered light from the particles and thus is many times more sensitive than use of fluorophores, or the use of such particles in methods described above." (*Yguerabide et al.*, Col. 10, Lines 12-16). By optimizing their system for the maximum detection of only scattered light, *Yguerabide et al.* sacrifice the capability to record useable images of types other than scattered light. Hence, the method and apparatus would not be appropriate to record a microscopic image of the **structures** in addition to recording an image of the detection particles for which the invention is optimized. As in *Schultz et al.* and *De Brabander et al.*, *Yguerabide et al.* is lacking an essential element, *i.e.*, simultaneously recording

an image of the detected particles and at least one microscopic image of the structures to which the detected particles are bound.

As explained above, in order to establish a *prima facie* case of obviousness under Section 103, the references alone or in combination must teach all the elements of rejected Claim 32, which they do not. Furthermore, there is no motivation to combine *Schultz et al.* and *De Brabander et al.* with *Yguerabide et al.*, or change what is taught by these references. Therefore, it follows that Claim 32 is non-obvious in view of *Schultz et al.* and *De Brabander et al.*, and further in view of *Yguerabide et al.*.

As Examiner Stock has indicated, dependent Claims 33, 35 and 39-42 contain all the limitations established in independent Claim 32, due to their dependency therefrom. Therefore, Claims 33, 35 and 39-42 are also non-obvious in view of *Schultz et al.* and *De Brabander et al.*, and further in view of *Yguerabide et al.*, due to their dependency from Claim 32.

Withdrawal of the rejection of Claims 33, 35 and 39-42 for reasons of obviousness is courteously requested.

The Rejection of Claim 46 Under 35 U.S.C. § 103(a)

Claim 46 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Schultz et al.* in view of *De Brabander et al.*, further in view of United States Patent No. 6,214,560 (*Yguerabide et al.*), and further in view of United States Patent No. 4,169,676 (*Kaiser*). Applicant respectfully traverses this rejection and requests reconsideration for the following reasons.

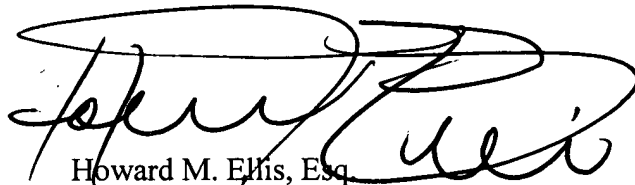
As Examiner Stock has indicated, dependent Claim 46 contains all of the limitations established in independent Claim 32, due to its dependency therefrom. As previously mentioned, Claim 32 is non-obvious in view of *Schultz et al.* and *De Brabander et al.*, and further in view of *Yguerabide et al.*. Since *Kaiser* does not teach the missing element, *i.e.*, simultaneously recording a detection image and at least one microscopic image, for all the above-mentioned reasons and due to its dependency from Claim 32, it follows that Claim 46 is also patentable over *Schultz et al.* in view of *De Brabander et al.*, further in view of *Yguerabide et al.*, and further in view of *Kaiser*. Accordingly, withdrawal of the rejection of Claim 46 under 35 U.S.C. § 103(a) would be entirely appropriate.

Attorney Docket No. : LASP:111-US-
Appl. No. 09/857,960
Amdt. dated January 5, 2005
Reply to Office Action of September 8, 2004

Conclusion

For all the reasons outlined above, Applicant respectfully submits that the amended claims are patentable over the cited references and in condition for allowance, which action is courteously requested. However, in the event of any remaining issues, it is courteously requested that Examiner Stock contact the undersigned attorney of record.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Howard M. Ellis", written over a horizontal line.

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Dated: January 5, 2005